

REMARKS

Claims 1-27 are pending in the present Office Action. As of the present amendment, claims 28-33 are new, claims 1 and 21 are amended, and claims 5, 6, 7, 9, 10, 12, 13, 15, 16, 25 and 26 are canceled.

Referring to page 3 of the Office Action, the Examiner indicates that claims 3 and 23 have allowable subject matter, and are allowable if rewritten in independent form including all of the limitation of their respective base claims 1 and 21, respectively.

Claims 1 and 21 are amended to further clarify the invention. Support for the amendments are found in Fig. 2 of the drawings, reference numerals 36 and 38 referring to the “US Driving Circuit” and the “Solenoid Driving Circuit”. The “driving control device” of amended claim 1 finds support in Fig. 2 reference numeral 39 referring to the “Foot Switch”.

Claims 28-33 are new. Claims 28 and 31 find support in Fig. 12 of the drawings and the language “output setting units” corresponds to the buttons 182 and 183.

Therefore, no new matter is added by this amendment.

The Substantive Rejections under 35 USC § 102

In the Office Action, claims 1, 2, 4-19, 21, 22 and 24-27 are rejected under 35USC 102(e) as being anticipated by Hirt 2002/0010486 (hereinafter "Hirt").

Further, claims 1,2,4,6,8-11,12,15 and 17-20 are rejected under 35USC § 102(e) as being anticipated by Du, et al. 2004/0127925 A1. Thus, the Du reference does not anticipate independent claim 21. The rejections are respectfully traversed.

Claim 1

Claim 1 (as amended) calls for:

- a first probe which transmits first mechanical energy to a distal end side thereof and pulverizes a calculus by the first mechanical energy;
- a first mechanical energy generating device which is arranged on a proximal end side of the first probe and generates the first mechanical energy;
- a second probe which transmits to a distal end side thereof, second mechanical energy different from the first mechanical energy and pulverizes the calculus by the second mechanical energy; ~~and~~
- a second mechanical energy generating device which is arranged on a proximal end side of the second probe and generates the second mechanical energy different from the first mechanical energy,
- a first driving signal generating circuit for generating a first driving signal to drive the first mechanical energy generating device;
- a second driving signal generating circuit for generating a second driving signal to drive the second mechanical energy generating device;
- a driving control device which can control the first and second driving signal generating circuits to generate the first and second driving signals respectively independently; and
- wherein a probe arrangement structure is provided in which the first probe and the second probe are arranged substantially coaxially or concentrically.

The present invention recites in claims 1 and 21 a first probe which transmits first mechanical energy to a distal end thereof and pulverizes a calculus by the first mechanical energy. A second probe transmits to a distal end side thereof a second

mechanical energy different from a first mechanical energy and pulverizes the calculus by the second mechanical energy. The first and second mechanical energy are provided by first and second mechanical energy generating devices. The probes are arranged such that the first and second probes are substantially coaxial or concentric. Claim 21 further claims a driving device which supplies electrical driving energy to generate the first and second mechanical energy in the first and second mechanical energy generating devices.

Further, claims 1 and 21 as amended, claim “a first driving signal generating circuit”, a “second driving signal generating circuit”, and a “driving control device”. All of which are shown in Fig. 2 of the drawings. In the present invention, the energization control device 35 comprises a US driving circuit 36 which drives the ultrasonic lithotripsy probe 2 and corresponds to the “first driving signal generating circuit” of claims 1 and 21. A pump driving circuit 37 sucks the pulverized calculus so that it can be sucked by the ultrasonic lithotripsy probe 2 driven by the US driving circuit 36. A solenoid driving circuit 38 drives the mechanical lithotripsy probe 3, and corresponds to the “second driving signal generating circuit” of claims 1 and 21 (specification of the present invention, page 10, second para). The foot switch 39 serves as “a driving control device” as claimed in claims 1 and 21 (specification of the present invention, page 10, last para).

Neither Hirt nor Du disclose the above discussed subject matter of the claimed invention in claims 1 and 21.

To maintain a 35 U.S.C. §102 rejection, a reference must teach each and every element of a claimed invention (MPEP 2131). Lindeman Maschinenfabrik GMBH v. American Hoist and Derrick Company, 730 F.2d 1452, 1458; 221 U.S.P.Q. 481, 485

(Fed. Cir., 1984). Hirt and Du do not teach each and every element of the claimed invention.

Hirt discloses a device for removal of calculi. The device comprises a metallic probe or sonotrode 8 (para [0014]) which is excited by an electrically controlled ultrasonic transducer for generating longitudinal oscillations. The sonotrode accommodates a coaxially arranged impact probe 20 (para [0016]) driven magnetically to impact the calculi. The impact probe may be used for fragmentation of calculi. As can be seen in Figure 1 of the Hirt publication, the sonotrode 8 and the impact member 22 are concentrically positioned along the same longitudinal axis. Both of the probes are hollow and allow for aspiration of calculi particles therethrough. An impedance transformer 12 is connected via lines 14 to the piezoceramic discs of the ultrasonic transducer to excite the sonotrode (para [0013]). The bore 18 is connected with a suction duct 19 which is provided for sucking-off all of the particles which during a fragmentation of calculi by means of the sonotrode 8 are generated in the body hollow (para [0014]).

An impact probe 20 forms a working element of a second functional part of the device disclosed in Hirt which may be used for fragmentation of calculi. The impact probe 20 can be energized by a mass body 21 which applies an impact member or projectile 22 to the mass body 21 to transmit shock or pressure waves to the impact probe 20. The impact member 22 may instead also be driven hydraulically or electromagnetically [para 0015]. An axially bored insert body 29 (Hirt, Figure 2) is inserted into the tube 24 in the vicinity of the proximal end of the impact probe 20.

The patent publication to Du et al. discloses a slideable floating probe 44 disposed concentric to and over/under the fixed probe 32 [para 0027]. The device shown in

Figures 1-4C discloses a percutaneous surgical instrument 10 for de-bulking calculi. The device includes an actuator 12 for generating vibrations at ultrasonic frequencies which may be formed from a plurality of piezoelectric crystals or magnetostrictive assembly 16 and a back plate 18 [para 0022].

According to the Du reference, the floating probe 44 operates at low frequencies and efficiently breaks large stones into small pieces, and an ultrasonically driven fixed probe 32 disintegrates the ruptured calculi into finer particles which then may be aspirated through a lumen through the fixed probe 32 and a lumen 70 through the horn 22 which communicates with a suction port 74 [para 0031].

However, neither Hirt nor Du disclose the “first driving signal generating circuit”, a “second driving signal generating circuit”, and a “driving control device”, as claimed in amended claims 1 and 21, and shown in Fig. 2 of the drawings.

Thus, Hirt and Du do not disclose the claimed elements of claim 1 and 21, and therefore do not support a rejection of the claims under 35 USC § 102(e). Further, neither Hirt nor Du teach, suggest or provide motivation individually or in combination to arrive at the claimed invention. Therefore, Applicants believe the invention as claimed in claims 1 and 21 to be in condition for allowance and respectfully request such allowance.

Dependent Claims 2-4, 8, 11, 14, 17-20, and new dependent claims 28-30 incorporate all of the structure of claim 1, and are believed allowable for the same reasons discussed above, as well as for the additional subject matter claimed therein. Dependent claims 22-24, 27 and new dependent claims 31-33 incorporate all of the structure of claim 21, and are believed allowable for the same reasons discussed above, as well as for the additional subject matter claimed therein.

Claims 3 and 23 were indicated by the Examiner to be allowable if rewritten in independent form. Applicants believe claims 3 and 23 to claim allowable subject matter as indicated by the Examiner, and to be allowable as dependent claims from patentable base claims 1 and 21, respectively. Therefore, Applicants believe dependent claims 2-4, 8, 11, 14, 17-20, 22-24, and 27-33 to be allowable over the Hirt and Du references.

Therefore, in view of the foregoing, Applicants respectfully request reconsideration, withdrawal of all rejections, and allowance of all pending claims in due course.

If the Examiner determines that anything further is desirable to place this application in even better form for allowance, the Examiner is invited to telephone the undersigned.

Respectfully submitted,



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